

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

Publication number:

0 599 012 A3

(12)

EUROPEAN PATENT APPLICATION(21) Application number: **93115428.0**

(51)

Int. Cl.⁶: **G06F 9/318**(22) Date of filing: **24.09.93**(30) Priority: **27.11.92 US 982327**(43) Date of publication of application:
01.06.94 Bulletin 94/22(84) Designated Contracting States:
DE FR GB IT(88) Date of deferred publication of the search report:
04.01.95 Bulletin 95/01(71) Applicant: **MOTOROLA, INC.**
1303 East Algonquin Road
Schaumburg, IL 60196 (US)(72) Inventor: **Studor, Charles F.**

2110 Matthews Drive
Austin,
Texas 78703 (US)
Inventor: **Divine, James S.**
5809 Back Court Drive
Austin,
Texas 78731 (US)

(74)

Representative: **Hudson, Peter David et al**
Motorola
European Intellectual Property
Midpoint
Alencon Link
Basingstoke,
Hampshire RG21 1PL (GB)

(54) **Extensible central processing unit.**

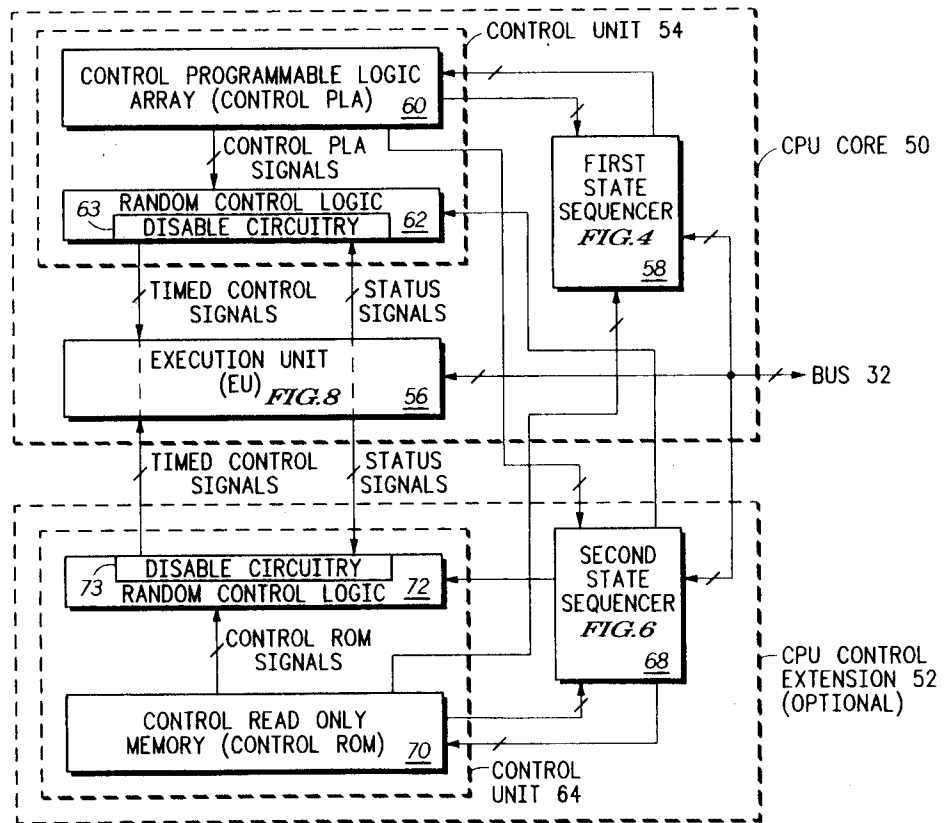
(57) An extensible central processing unit (CPU) (12 or 12'). By modifying the architecture of a new or prior art CPU, a new or prior art CPU can be made extensible so that new instructions can be added in a simple and cost effective manner to meet differing customer needs. The term "extensible" in regard to a CPU is used to mean that new instructions can be added to the CPU simply by adding certain des-

ignated circuitry, without the need to significantly change the existing CPU circuitry. In some embodiments, the additional designated circuitry may include control circuitry in the form of CPU control extension circuitry (52 or 152). In some embodiments, the additional circuitry may include non-control circuitry in the form of execution unit extension circuitry (153).

EP 0 599 012 A3

EXTENSIBLE
CENTRAL PROCESSING
UNIT (CPU) 12

FIG.2





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 93 11 5428

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
X	ELECTRONICS vol. 48, no. 9 , 6 February 1975 , NEW YORK US pages 114 - 115 MOSER, JR. 'Increasing an instruction set without increasing word length' * the whole document * ---	1,2	G06F9/318
A	WO-A-89 11128 (WANG LABORATORIES LTD.) * pages 1-16 ; pages 66-72 * ---	1,3,6,7	
A	IBM TECHNICAL DISCLOSURE BULLETIN. vol. 29, no. 2 , July 1986 , NEW YORK US pages 548 - 549 'Full function series/1 instruction set emulator' * the whole document * ---	1,4,5,8	
A	WESCON TECHNICAL PAPERS vol. 26, no. 16/4 , September 1982 , NORTH HOLLYWOOD US page 1-5 GUTTAG AND VANAKEN 'Macrostore firmware emulation as an alternative to co-processors' * the whole document * ---	1,7	TECHNICAL FIELDS SEARCHED (Int.Cl.5) G06F
A	IBM TECHNICAL DISCLOSURE BULLETIN. vol. 21, no. 1 , June 1978 , NEW YORK US pages 201 - 202 'New instruction and extended instruction handling' * the whole document * -----	1,7	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 3 November 1994	Examiner Klocke, L
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			